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(54) Title: INCREASING GAMETE PRODUCTION WITH A GENE SWITCH

(57) Abstract: A method of enhancing the production of gametes in a transgenic non-human animal is carried out by: (a) providing a transgenic non-human animal comprising cells that contain: (i) a response element; (ii) a nucleic acid encoding FSH β operatively associated with said response element; (iii) an FSH β promoter; (iv) an FSH β locus control region operatively associated with said FSH β promoter; and (v) a nucleic acid encoding a ligand-controllable receptor operatively associated with said FSH β promoter, wherein said receptor binds to said response element in the presence of said ligand when expressed in a host cell; and (b) administering said ligand to said animal in an amount effective to (i) stimulate the production of FSH β in said animal above that found in a corresponding untransformed type animal; and (ii) stimulate the production of gametes in said animal to a level greater than that found in the corresponding untransformed animal.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/39236

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 15/00, 15/63, 5/00; C12P 21/00; G01N 33/00; C07H 21/04
 US CL : 536/23.1, 23.4, 24.1; 435/320.1, 325; 800/3, 21, 8

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 536/23.1, 23.4, 24.1; 435/320.1, 325; 800/3, 21, 8

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 STIC SEQUENCE DATABASE; EAST; MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,200,778 B1 (TRECO et al) 13 March 2001 (13-03-2001), see sequence comparison with SEQ ID NO 4 and rest of the article.	2
—		————
Y		1, 3-70
T	US 6,569,681 B1 (IVANOV E) 27 May 2003 (27-05-2003), see the entire document, particularly SEQ ID NO 2	1-70
X	Database GenEmbl, Accession Number PIGFSHBS, HARAI, T. et al., 14 April 2000, see the sequence comparison	2
—		————
Y		1, 3-70
Y	KUMAR, T.R. et al . Gonadotrope-specific expression of the human-follicle-stimulating hormone beta-subunit in pituitaries of transgenic mice. Molecular Endocrinology. January 1992, Vol. 6, No. 1, pages 81-90, see the abstract.	1-70
Y	KATO, Y. et al. Multiple binding sites for nuclear proteins of the anterior pituitary are located in the 5'-flanking region of the porcine follicle-stimulating hormone (FSH) beta-subunit gene. Molecular and Cellular Endocrinology. 1999, Vol. 158, pages 69-79, see entire article.	1-70

Further documents are listed in the continuation of Box C.

See patent family annex.

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